

CLAIMS

What is claimed is:

1. A suspension for use with a vehicle which travels in a longitudinal direction, the suspension comprising:
 - a lower fork tube;
 - an upper fork tube slidably coupled to the lower fork tube, wherein one of the fork tubes is disposed partially within the other; and
 - a fork bottom coupled to the lower fork tube and having different stiffness in the longitudinal direction than in a lateral direction generally perpendicular to the longitudinal direction.
2. The suspension of claim 1 wherein:
 - the longitudinal stiffness is greater than the lateral stiffness.
3. The suspension of claim 2 wherein the fork bottom comprises:
 - a substantially semi-cylindrical fork bottom body.
4. The suspension of claim 3 wherein the fork bottom further comprises:
 - means for adjusting a lateral stiffness of the fork bottom body.
5. The suspension of claim 4 wherein the means for adjusting comprises:
 - a tension cable having a lower end coupled to a lower end of the fork bottom body and an upper end coupled to an upper end of the fork bottom body; and
 - the fork bottom body including a fulcrum over which the tension cable is stretched.
6. The suspension of claim 5 wherein the means for adjusting further comprises:
 - a threaded adjuster coupled to the tension cable for adjusting tension on the tension cable.
7. The suspension of claim 4 wherein the means for adjusting comprises:
 - a tension rod having a lower end coupled to a lower end of the fork bottom body and an upper end coupled to an upper end of the fork bottom body, whereby at least one of tension and pressure may be applied to the fork bottom by the tension rod.

1 8. The suspension of claim 2 further comprising:

2 a fulcrum coupled to the fork bottom; and

3 a tension cable coupled to the fork bottom and placed under tension against the fulcrum
4 to impart lateral pressure against the fork bottom.

1 9. The suspension of claim 2 wherein:

2 the lower fork tube is disposed within the upper fork tube.

1 10. The suspension of claim 2 further comprising:

2 the vehicle.

1 11. The suspension of claim 10 wherein the vehicle comprises:

2 a two-wheeled vehicle.

1 12. The suspension of claim 11 wherein the two-wheeled vehicle comprises:

2 a motorcycle.

1 13. A two-wheeled vehicle comprising:

2 a frame including a steering tube;

3 an upper triple clamp rotatably coupled to the steering tube;

4 a lower triple clamp rotatably coupled to the steering tube;

5 a pair of sliding tube forks coupled to the triple clamps;

6 a wheel assembly including an axle; and

7 a pair of fork bottoms coupling the forks to the axle, wherein the fork bottoms have
8 different stiffness in a longitudinal direction of travel of the motorcycle than in a lateral direction
9 substantially parallel to the axle.

1 14. The two-wheeled vehicle of claim 13 wherein:

2 the stiffness in the longitudinal direction is greater than the stiffness in the lateral
3 direction.

1 15. The two-wheeled vehicle of claim 14 wherein at least one of the fork bottoms comprises:

2 a fulcrum; and

3 a tension cable stretched over the fulcrum, placing the fork bottom under end-to-end
4 tension such that the fulcrum provides side-to-side pressure on the fork bottom to increase
5 sideways stiffness of the fork bottom.

1 16. The two-wheeled vehicle of claim 15 wherein the at least one of the fork bottoms further
2 comprises:

3 an adjuster for changing tension on the tension cable to adjust the sideways stiffness of
4 the fork bottom.

1 17. The two-wheeled vehicle of claim 16 wherein:
2 both of the fork bottoms comprise a fulcrum, tension cable, and adjuster.

1 18. The two-wheeled vehicle of claim 17 wherein the two-wheeled vehicle comprises:
2 a motorcycle.

1 19. The two-wheeled vehicle of claim 14 wherein:
2 the fork bottoms extend beyond an outer diameter of the wheel assembly.

1 20. The two-wheeled vehicle of claim 14 wherein:
2 the fork bottoms are longer than inner sliding tubes of the forks.

1 21. A method of adjusting side-to-side flex of a two-wheeled vehicle suspension, the
2 suspension including a sliding tube fork coupled to a fork bottom, the method comprising:
3 adjusting end-to-end tension on a tension cable which is coupled to both ends of the fork
4 bottom and stretched over a fulcrum between the ends of the fork bottom;
5 whereby side-to-side pressure exerted by the tension cable on the fulcrum, and by the
6 fulcrum on the fork bottom, is adjusted.

1 22. The method of claim 21 wherein adjusting the tension on the tension cable is
2 accomplished by:
3 turning a threaded tension adjuster which couples one end of the tension cable to the fork
4 bottom.

- 1 23. A fork bottom comprising:
2 a body having different longitudinal stiffness than lateral stiffness;
3 means at an upper end of the body for coupling to a fork tube;
4 means at a lower end of the body for coupling to an axle;
5 means at the upper end of the body for coupling to an upper end of a tension cable;
6 means at the lower end of the body for coupling to a lower end of the tension cable; and
7 a fulcrum substantially in a middle of the body.
- 1 24. The fork bottom of claim 23 wherein:
2 the longitudinal stiffness is greater than the lateral stiffness.
- 1 25. The fork bottom of claim 24 further comprising:
2 the tension cable.
- 1 26. The fork bottom of claim 25 wherein the fulcrum comprises:
2 means for positioning the tension cable.
- 1 27. The fork bottom of claim 25 further comprising:
2 an adjuster coupled to the upper end of the tension cable and to the upper end of the
3 body, for adjusting tension on the tension cable.
- 1 28. The fork bottom of claim 23 further comprising:
2 a lower fork tube integrally formed with the body.